

## REMARKS

Claims 17-24 are pending in the present Application. Claims 17, 23, and 24 have been amended, claims 25-31 have been added, leaving claims 17-31 for consideration upon entry of the present Amendment. No new matter has been introduced by these amendments. Reconsideration and allowance of the claims are respectfully requested in view of the above amendments and the following remarks.

### Claim amendments

Claims 17, 23, and 24 were amended to contain the term “is suitable for commodity storage.” Support for the amendment can be found at least on page 2 and 4 of the Specification as originally filed.

The purpose of the pallet is to provide a support for the cargo particularly during shipment and storage. . . .

The more stringent regulations for plastic pallets, both for *commodity storage* and idle pallet storage. . . .

(Specification, pages 2-3; emphasis added.)

Support is also provided in the Examples on page 34 of the Specification as originally filed:

Pallets were molded from the compositions and tested according to the UL 2335 protocol. Sample 5 met the Class II Commodity test with an overall rank average of about 2.0.

(Specification, page 34.)

### Introduction

Prior to addressing the rejections provided in the Office Action dated August 29, 2006, the Applicants would like to bring to the Examiner’s attention some history behind the pallets of the instant claims. Wood and plastic pallets were known at the time of the instant invention, however there were drawbacks to the use of each. Wood pallets are heavy and expensive, and are subject to water damage and insect infestation. (Specification, page 2.) Known plastic pallets were found to be more hazardous in fire conditions than wooden pallets as such plastic pallets generally flow during fires spreading molten plastic and generating dangerously high levels of heat.

(*Id.*) Because of these increased risks, the use and storage of plastic pallets have been more stringently regulated by National Fire Protection Association (NFPA 231 and NFPA 231C) and Factory Mutual than wood pallets. (*Id.*) Changes to NFPA 231 and NFPA 231C allow for plastic pallets to be regulated the same as wood pallets when experimental data show equivalency in the burning and suppression characteristics between the plastic and wood pallets and the pallets are listed for such equivalency. (Specification, page 3.) The changed protocols provide that specific test data will take precedence for determining classification of commodities. (*Id.*) It is believed that prior to the present invention, no pallet made from a plastic composition has met this equivalency. (*Id.*)

In an experiment to compare a plastic pallet according to the instant invention with a polyethylene resin pallet, the two pallets were tested according to the Underwriters Laboratory UL 2335 protocol. (Specification, page 35.) The prior art polyethylene resin pallet failed the test while the pallet of the instant invention passed. (*Id.*) Indeed, the pallet of the instant invention unexpectedly outperformed an oak stringer pallet and a wood 9-block pallet in such areas as the UL stacked idle storage test in the number of sprinklers activated, the radiometer, and the average steel beam temperature. (*Id.*) Furthermore, the pallet of the instant invention resulted in little to no fire spread. (*Id.*)

Thus, the Applicants have solved an unmet need in the area of pallets, providing a plastic pallet that overcomes the disadvantages of wooden pallets, while at the same time overcoming the disadvantages of prior art plastic pallets in fire safety by meeting or exceeding Underwriters Laboratory UL 2335 protocol.

#### Claim Rejections Under 35 U.S.C. § 103(a)

Claims 17-24 stand rejected under 35 U.S.C. 103(a) as allegedly obvious over Abolins et al. 4,504,613 (hereinafter “the ‘613 patent”) or Lee, Jr. 5,008,314 (hereinafter “the ‘314 patent”). Applicants respectfully disagree.

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a *prima facie* case of obviousness, i.e., that all elements of the invention are disclosed in the prior art; and that the prior art relied upon, coupled with

knowledge generally available in the art at the time of the invention, contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996).

The '613 patent generally discloses that the ductile impact strength and tensile elongation of flame retardant compositions of a polyphenylene ether resin and a poly(alkenyl aromatic) are upgraded by the addition of only small amounts, typically from about 0.1 to about 10 parts by weight, of high molecular weight polyfunctional esters or low molecular weight saturated polyesters (abstract).

The '314 patent generally discloses a thermoplastic blend for molding articles with resistance to environmental stress cracking and with good melt flow properties comprising a polyphenylene ether resin having a low intrinsic viscosity and a polystyrene resin having a high intrinsic viscosity. The composition can further contain an impact modifier and/or a flame retardant (abstract).

Independent claims 17 and 23 are directed to pallets that meet or exceed Underwriters Laboratory UL 2335 protocol for pallets. Independent claim 24 is directed to a method of forming a plastic pallet via injection molding polyphenylene ether resin; a polystyrene resin consisting of a random polystyrene copolymer, a rubber-modified polystyrene, or a combination thereof; and at least one flame retardant to result in a plastic pallet that meets or exceeds Underwriters Laboratory UL 2335 protocol for pallets.

It will be shown that the cited references i) fail to teach each and every limitation of the independent claims, and ii) the references provide no suggestion or incentive that would have motivated the skilled artisan to modify the references or combine the references.

First, none of the references teach plastic pallets, let alone a plastic pallet prepared from a polyphenylene ether resin; a polystyrene resin consisting of a random polystyrene copolymer, a rubber-modified polystyrene, or a combination thereof; and at least one flame retardant in an amount sufficient to impart a degree of flame retardancy to the pallet to pass UL 2335 protocol for pallets.

The Examiner states in the Office Action dated August 29, 2006 that

Applicants' claimed pallet has no structure and it is just another molded article, which can be conveniently molded from flame-retardant, impact resistant molding compounds. It would have been obvious to one having ordinary skill in the art; at the time the invention was made, to use the compounds of the cited references for molded plastic pallets.

(Office Action dated August 29, 2006, page 2.) The Applicants respectfully disagree as it is clear that the pallet of the claims is a large structure meeting a general shape and size suitable for the storage of commodities. (Specification, pages 2 and 4.) Indeed the UL 2335 protocol includes idle storage and *commodity classification tests*. (See UL's The Code Authority, Vol. 7, No. 1, 1998, page 1, previously provided to the Examiner; and Specification, page 34.) The commodity classification tests

measure the amount of heat released by commodities or contents stored on plastic pallets, such as those found in real-life warehouse applications. If heat release results demonstrate that the plastic pallets do not increase the heat generated by the Class II commodities during the fire test, then the commodity classification of the plastic pallets is equivalent to wood.

(UL's The Code Authority, Vol. 7, No. 1, 1998, pages 1-2.) A plastic pallet according to the instant claims was prepared and tested according to the UL 2335 protocol wherein the pallet was found to meet the Class II *Commodity* test with an overall rank average of about 2.0. (Specification, page 34.)

It is respectfully pointed out that the claimed pallet does not lack structure and is not "just another molded article" as argued by the Examiner. The claimed pallets are directed to those large structures used to hold commodity items for storage in warehouses. Exemplary pallet structures are disclosed in the Specification as filed including those meeting the Grocery Manufacturing Association requirements for pallets, i.e., 48" x 40"; 4-way entry; accommodate pallet jacks; have a smooth, non-skid, top load bearing surface having at least 85% coverage; a bottom loading surface and have cut-outs for pallet jack wheels from four (4) sides; rackable from 48" and 40" dimension; recyclable; desired weight under 50 pounds; have a load capacity of

2,800 pounds; capable of bearing 2,800 pound loads safely in stacks of 5 loads high racking; and weather and moisture resistant. (Specification, page 4.)

Accordingly, as the pallets of the instant claims do not lack structure and are not just another molded article, the cited references fail to teach or suggest each and every claim limitation of the claims since they do not teach pallets, let alone pallets meeting or exceeding UL 2335 protocol.

Furthermore, the references fail to provide any suggestion or motivation to prepare plastic pallets from a polyphenylene ether resin; a polystyrene resin consisting of a random polystyrene copolymer, a rubber-modified polystyrene, or a combination thereof; and at least one flame retardant in an amount sufficient to impart a degree of flame retardancy to the pallet to pass UL 2335 protocol for pallets. Although the '613 patent teaches a laundry list of articles, none of the articles are similar to pallets, and none would suggest the use of the disclosed resins for pallets meeting the stringent flame retardancy requirements. Pallets used to store commodities are required to be of a general size, shape, and strength to function as storage tools. The articles of the '613 patent are directed to items that do not require strength to hold thousands of pounds of weight, and most are directed to small items (e.g., decorative trim, small appliances, etc.). The only large items are arguably the laundry and dishwasher consoles and automobile consoles. None of these are required to withstand thousands of pounds of weight or to withstand any of the conditions expected for storage pallets. As the laundry list of articles of the reference are very different from plastic storage pallets, in terms of size, strength, flame retardant qualities, and environment of use, there is no suggestion or motivation to prepare pallets from the materials of the cited references to meet the stringent requirements of UL 2335. Reconsideration and removal of the rejections are respectfully requested.

New Claims

Claims 25-31 have been added to further claim the invention. Antecedent basis for the new claims is found at least at page 4 of the Specification as originally filed.

Information Disclosure Form 1449 with Incomplete Initialing

It is respectfully noted that the three references (JP 05096587, JP 05337993, and [www.kwpc.com/kwpc/markets/directex](http://www.kwpc.com/kwpc/markets/directex) (3,5,6 and overview)) on page 7 of the Information Disclosure Statement that was mailed on May 10, 2004 were not initialed by the Examiner. The Applicants respectfully request an initialed Information Disclosure Citation sheet with the next substantive action.


It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and allowance are requested.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 50-1131.

Respectfully submitted,

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